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FIELD-WORK AND NATURE-STUDY
PART I
THE PEDAGOGICAL ASPECT

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Field-work as used in this paper may be broadly interpreted as referring to any type of school-directed activity of such a character as to bring the children into direct contact with their out-of-door nature environment, from the standpoint of their own interests in nature. From this point of view the incorporation of the interests and experiences derived through this contact is most desirable and essential in elementary education.

It seems due time that steps should be taken, especially in our city schools, for bringing about more effective means and demands, through our school work, for taking children from the schoolrooms into gardens, truck-patches, parks, fields, and woodlands for the purpose of extending and intensifying their sense-contact experience with natural objects and phenomena and of fostering the "old naturalist" love of nature which seems so essential to child life.

No one subject, recognized as belonging to the elementary-school curriculum, has been so widely discussed, has received so much thoughtful consideration, during the past five years, as that of nature-study. It has been reviewed in all of its phases; its old aspect and its new; its aims and purposes; what it is and what it is not; and how it should be taught. Much of good has

come out of all of this and the nature-study movement is stronger today, filled with more promise for effectiveness, than ever before. But this plea for the study of nature in our elementary schools is not new. Through the entire period of the past century the plea for the incorporation of more of the study of nature into our elementary-school curriculum never ceased. The conviction that this seemingly instinctive, deep-seated interest of children in nature should be a very potent factor in elementary-school work, has never been absent.

Yet during the century there never was a time when the study of nature gained sufficient foothold in the schools to insure its survival when it came into contention with the languages, number, history, literature, geography, etc. Doubt and confusion still exists in the minds of both teachers and parents as to the real purpose of nature-study or its relative educational value.

In the face of all that has been said and done, we need to seek the reason for this doubt and confusion. I believe that the answer is not to be found in the subject-matter of nature-study, but in our general conception of the aims and purposes of elementary education as a whole and the method of procedure by which these purposes are to be realized. Up to date we have no agreed-upon, conscious educational standards by which to test the educational-value-claim of nature-study nor of any other elementary-school subject of thought content. Our educational theories are to a certain extent formulated in the light of scientific progress, but our educational practices are directed by old traditions.

Our elementary-school system was organized to administer a course of study through the medium of textbooks and peculiarly adapted to schoolroom and class-group work. Studies which have been added from time to time have had to adapt themselves to this schoolroom and class-group idea with such modifications as laboratories and workshops. During its period of organization the public was dominated by the conception that education consisted in acquiring a certain fund of knowledge, or degrees of skill, in certain systems of subjects which man had arranged for study. And the school struggle was, and is yet, to get pupils to

learn these formal systems. School work has fallen time and again into a dull routine and the warning that "the facts of science have been so abundantly acquired, so thoroughly systematized, and rendered so easily available through textbooks, manuals, and models that we frequently resort to the teaching of these schemes of knowledge instead of the knowledge itself" has had to be sounded at frequent intervals. Books, supplemented by the teacher, have been the reservoirs of knowledge. In the meantime the effort required to interest pupils in these studies, the meager results for the time and energy expended, the constant failure of subjects to stimulate any steady interest, and to impart to the pupil the delight and power they promised, have stimulated investigations into the act of teaching and learning and the principles involved.

As a result of these investigations there has been a gradual facing about in educational theory with a much slower adjustment in school organization and teaching methods. We have not yet been able to effect a coalescence of the two ideas, "education the act of learning subject," in the light of classical tradition; and "education for power and development" in the light of scientific progress. We find ourselves constantly attempting, urged forward by our old conceptions and established customs, to reach our present scientific conceptions through old traditional practices.

The facts relating to the purpose of elementary schools and the results which are desired are quite generally agreed upon. It is almost universally accepted that these schools are established for the purpose of educating children and that education has, as a part of its function, to do with aiding children in acquiring a certain skill in the use of number, spelling, reading, writing, drawing, etc., and a certain fund of information relating to the more fundamental facts in history, literature, sciences, etc. It is also to a certain extent accepted that education should have to do with individual development, generating power, and initiative, with growth into social efficiency.

Reduced to its simplest terms we have involved in elementary school work two prime factors: (1) Various subjects of study,

the pursuit of which involves the acquirement of certain types and degrees of skill and information, and (2) the pupil. The process of educating is conceded to be through some interrelation of pupil with subject or subject with pupil. Our viewpoint as teachers, as to the desired nature of this interaction, is the crucial thing in educating. "What gets to the child is dependent upon what is in the mind of the teacher and how it is in his or her mind." In this, as has been pointed out, there exist two dominant ideals. Either these subjects which make up the course of study are selected as types of knowledge to be learned by the pupil, the amount learned or the skill acquired being the measure of educational progress; or they represent types of subjects, means, for the development of desired qualities in physique, mentality, skill, working efficiency, the qualities and power gained in these directions being the measure of educational progress. This distinction as to our attitudes in teaching may not at all times appear clear-cut or essential, but the path of elementary-school progress is strewn with the wrecks of methods and the mutilated forms of noble purposes which were foundered on the conception that teaching is wholly concerned with inducing children to learn the subject; and these methods have ranged from Grad Grinds through all types of (un)pedagogical novelties warranted to induce, lead, stimulate, or trick the pupil to learn the desired subject. Accompanying the growth of our knowledge of the laws which underlie human development has come a growing belief and confidence that the subjects, making up the elementary-school curriculum, may be so taught that the act of learning will prove the vital and essential factor in education; a conviction that children's interests may, and should, furnish the basis for educational method and progress. But to realize this we must find out their attitudes and view-points, and direct them rather than ignore them and set them to work from our own view-points. Paralleling this conception has come a fuller appreciation of the law of self-activity as an essential and fundamental condition for growth. This does not imply merely the self-effort of a pupil in acquiring certain facts pertaining to some subject which is taught, but it implies at its very foundation that

this effort or action shall be a response to some deep-seated feeling or need, interest, desire, or conscious duty on the part of the pupil, and that the effort put forth shall be a direct response to this impulse from within the pupil. In making these assertions I am not unmindful of exceptional occasions when the present desires and interests of the child must give way to the needs and duties of the occasion, but these happenings in no way nullify the deeper fact that, for both the child and the adult, the best of education comes through direct response to individual interests and needs as determined by the individual himself.

No one seriously questions that, with an adult, power and control are obtained through the realization of personal ends and problems, through personal selection of means and materials which are relevant, and through personal adaptation and application of what is thus selected, together with whatever of experimentation and of testing is involved in this effort. Practically every one of these three conditions of increase in power for the adult is denied for the child. For him problems and aims are determined by another mind. For him material that is relevant or irrelevant is selected in advance by another mind. And upon the whole there is such an attempt to teach him a ready-made method for applying his materials to the solution of his problems, or the reaching of his ends, that the factors of selection and experimentation are reduced to a minimum. With the adult we unquestioningly assume that an attitude of personal inquiry, based upon the possession of a problem which interests and absorbs, is a necessary precondition of mental growth. Alertness is our ideal in the one case; docility in the other. With the one we assume that power of attention develops in dealing with problems which make a personal appeal, and through personal responsibility for determining what is relevant. With the other we provide next to no opportunity for the genesis and evolution of problems out of immediate experience, and allow next to no free mental play for selecting, assorting, and adapting the experiences and ideas that make for their solution.[1]

The desirability of acquiring a comprehensive fund of useful information, a high degree of skill, may pass unquestioned. But whether, in our efforts to induce children to acquire these, we do not too frequently suppress qualities without which there can be no great efficiency in either knowledge or skill is open to question.

The assumption is that no method can be adjudged right or wrong, no subject good or poor, no aim sufficient or insufficient,

[1] Dewey, *Psychology and Social Progress.*

except as they, in combination, influence the child and give scope in opportunity for approximating these conditions essential for growth. If field-work, as a method of school work, offers opportunity for the fulfilment of these requirements of conditions for growth—since no one can question the value of the subject-matter itself—then the problem which we have failed to meet is that of adjustment. Nature-study is in essence an out-of-door study, and it will succeed only to the degree in which we can afford children the out-of-door advantages which the study demands. If nature-study is to succeed we must be sure that it is really a study of nature. The inability of schools to establish a method of procedure which extends and incorporates into its work the out-of-door interests of children in nature has been the basal cause of the frequent failures in nature-study and its slow progress in securing a strong foothold in the curriculum. We have failed, or rather refused, to recognize seriously in school work the factor most vital in the interrelation of children with nature, namely that impulse from within the child which we term "love of nature." We seem to grope in the dark when we try to teach anything less crude than conscious knowledge. We have practically failed to direct or develop in any broad way those inner feelings or emotions which stimulate individual effort and vitalize the facts in learning. Nor yet have we been keen to detect the environmental conditions which generate and develop the feelings in a wholesome way. Wherever, in teaching, we have tried to recognize the importance of these feelings and to direct them, as in the teaching of ethics, morality, and religion, we have drifted to meaningless formalism or to sentimentality, until at the present time we are so thoroughly adrift in the matter that we avoid it altogether. So in nature-study, armed with our fragments of nature, books, and stories, we try to accomplish through formal teaching that which can only be accomplished by free and direct contact with out-of-door nature. But after this contact, if we are wise enough to utilize the best which results from this contact, we may accomplish with ease that which we failed to accomplish with effort before. Feeling, in nature, cannot be detached from facts and information without

degenerating into sentimentality which on the whole is worse for the individual than formalism.

Trying to respect and take into account children's feeling for nature does not imply a lack of need or demand for information; it rather implies an increase in subject to meet the demand of that increase in mental capacity which always accompanies genuine interest. No teacher who has ever spent an hour in a rich out-of-door environment with a healthy class of pupils has been nearly so vividly impressed with his fund of information, in relation to their interests and questions, as he has been with his poverty of it. In order to utilize these interests, to enlist them in the service of human development and in the acquirement of knowledge and skill, we must give up our efforts to devise courses and methods which will communicate a fund of human knowledge to the children in the shortest possible time and must find out how to generate and direct interests which will give freedom to self-activity in the direction of that knowledge and skill which we deem essential to civilization.

We need to appreciate in all fulness what John Burroughs means when he says that in his contact with nature he has always "found feeling in advance of intellectualization." What Hall means when he says, "The spirit of botany is where plants and flowers grow; of geology in the field and not in the laboratory or cabinet; and of astronomy in the silence of the open night. . . . . Nature is sentiment before it is formulae, idea, or utility." To understand the need of the freedom of outdoors in all of its completeness is to catch the tone of Emerson's feelings when he said:

> All is needed by each one;
> Nothing is fair or good alone.
> I thought the sparrow's note from heaven,
> Singing at dawn on the alder bough;
> I brought him home, in his nest, at even;
> He sings the song but it cheers not now,
> For I did not bring home the river and sky;—
> He sang to my ear,—they sang to my eye.

This interest and sympathy between the child and nature is not in any sense conscious sentiment, as is frequently true in the

adult, and any attempt to treat it as such must prove fatal. It exhibits itself in an insatiable curiosity and inquisitiveness which, if not suppressed by our own indifference and lack of means, will not be satisfied until the individual has experienced or until he knows. I risk the assertion that there is no sympathetic teacher or parent who does not feel that if she had the wisdom and knowledge to keep alive, to direct and feed this spirit of inquisitiveness, it would lead the child to an acquaintance with nature, a command and control of the elements of the sciences with a sureness and directness possible in no other way. To furnish a method of procedure which will foster this love of nature, which will secure an acquaintance and command of nature knowledge in a wholesome way, which will give a broad experience and a fund of information out of which, in proper season, the various natural sciences may be organized without quenching the fires of interest is the purpose of field-work. If we pursue the matter in a wholesome, genuine way we may rest assured that the pupil will reach in a surer and better way the end which we had hoped to gain through our more formal work. Our experience makes us perfectly aware that our indoor study has not succeeded in any adequate degree in aiding children to "read and enjoy the wonder-book of nature." We need not neglect any of the other purposes of nature-study, in trying to keep alive this interest; nor can we hope to succeed if we do not foster it, or if we conceive the idea that it can be kept alive by anything but free contact with out-of-door nature.

PEDAGOGICAL SCRAP-IRON, OR THE RUMINATIONS OF A NORMAL-SCHOOL VISITOR

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8:15 A. M. RECEPTION ROOM. My purpose in visiting this normal school is chiefly to note modern methods in teaching language. However, I hope I shall see something of the psychology and pedagogy also. How perfectly systematized all details of the day's work seem to be. Absolute discipline evident, yet its machinery wholly out of sight. And how delightful to have an usher thus assigned to help one put in every moment to the best advantage! What shall I visit first?

8:30. CLASSROOM A. *A recitation upon the "subjunctivè mode in English."*—This lesson seems to be conducted in a clear-cut, definite way. The students quite glibly give specific forms called for under the name *subjunctive.* They do not, however, as they should if they have mastered the subject, present for consideration abundant citations showing use of the subjunctive in literature. To such use it is now, of course, practically confined, being almost obsolete in popular everyday discourse. I wonder whether these advanced pupils are aware that they are studying a phase of English dead except to the scholar, and that modern grammarians often discard the subjunctive mode entirely. Would they even recognize the "mode" if it should occur in their general reading?

8:45. Not a hint yet to indicate any intelligence upon the part of these embryo teachers as to the practical usefulness or otherwise of the subject they are reciting about. Doubtless they will go out into district schools to waste the time of country pupils with similar unapplied lessons upon this obsolescent phase of English. Ah, the usher comes for me, though I would fain see this ceremony in dead English through its final rites.

8:50. *A psychology class.*—And so these pupils are taught that "concentration of attention upon an act *will result in the act,* even though one make up his mind, that is, even though he will, not to do the deed." Examples given are, the man who jumps "unwillingly" from a cliff, and in certain cases the hypnotized person. This is "developed" from a bright girl whose modern English is guiltless both of subjunctives and of certain other requirements of the grammar books. But what a pity to leave this as final impression, unrelieved by the more comprehensive truths (1) that no person will ever commit a crime who firmly and constantly believes that he will not, and (2) that no persons are hypnotized except when either voluntarily, passively, or expectantly giving up their own self-control. Here lay ready at hand the practical applied lesson of self-control, self-direction, and persistency of moral attitude, which should have made this recitation rich in ethical culture. I am sorry that the bell for chapel rang so soon. Even if the moral application be presented tomorrow—as seems, however, doubtful from the trend of today's treatment—the postponed application cannot then be driven home with full force. Correct *de facto,* the lesson is incorrect *de jure,* except as reinforced by the larger psychological truth that man can and must *control his attention.* May Providence grant that no morbid weakling in this class ever use this recitation hour as scapegoat for future misdeeds!

9:30. *An eighth- and ninth-grade grammar class, analyzing and parsing Gray's "Elegy in a Country Churchyard."*—Either I have had trouble in hearing these pupils, or else I have been in a brown study, for since I sat here they have analyzed the following:

> Far from the madding crowd's ignoble strife,
> Their sober wishes never learn'd to stray;
> Along the cool sequestered vale of life
> They kept the noiseless tenor of their way.
>
> Yet e'en these bones from insult to protect
> Some frail memorial still erected nigh,
> With uncouth rhymes and shapeless sculpture deck'd,
> Implores the passing tribute of a sigh.

Their name, their years, spelt by the unletter'd Muse,
The place of fame and elegy supply:
And many a holy text around she strews,
That teach the rustic moralist to die.

I wish I had noted whether they disposed of "far" correctly. I recall what nonsense those two first lines used to make in my own mind because I construed "far" with "stray." I must at least be sure how they explain ungrammatical "teach." For here is a nugget of grammatical gold, an actual "disagreement" of verb and subject for the sake of rhythm! Will they seize the gold, I wonder, or will they go on picking up only worthless scrap-iron—because their eyes have been trained to recognize only the latter? Ah! it seems that neither this long-experimented-upon class nor their "critic teachers" have even perceived the ungrammatical expression. Not that I should care personally to have them do so. Love of the beautiful forbid! But this school claims to be teaching these pupils grammar; and if they do know even a little grammar they should surely demand concord between subject and verb, and not parse "agreement" where none exists. Even thus is many a child misled!

Clearly this is a case in absolute proof that study of grammar does not give grammatical perception. Now they go on again, parsing, inflecting, and construing each word, picking up busily the grammatical scrap-iron, and all oblivious of the mine of literary treasure over which they heedlessly tread. Very suavely I ask in a whisper of the "critic teacher," or "model teacher," or whatsoever her title may be, "How did the pupils construe 'to protect'?" "What did they make it modify?" "'To protect,'" she informs me gravely, "has merely the adverbial relation, and does not modify anything." My surprise is so ill-concealed that she hastens to assure me, "The text we use indorses such use of the infinitive," and she points out the category which she has thus interpreted. I again cautiously press the inquiry, "But what does 'to protect' modify?" Quickly perceiving the true logical relation, she now answers me correctly. But is this a normal-school class in ninth-grade grammar?

Rather shamefacedly, because of my momentary inattention,

I ask, "Will you permit your pupils to read those two last lines as if they were prose instead of verse, changing any incorrect form?" But this, it seems, is a new and impossible task. Answers show conclusively that the thought in these stanzas is not comprehended, and that Lewis Carroll's "Jabberwocky" would probably have been better material for use. Finally, however, one little girl offers the needful "teaches," to our general relief. I do not venture to ask what is meant by "the unletter'd Muse," for I suspect—but there comes that most attentive usher. Never was there school where visitor's wishes received more courteous and watchful respect. However, I am glad to go; but I do wonder how much longer Gray's beautiful "Elegy" will be prostituted to these unseemly ends. Ah, yes, "Jabberwocky" would be delightful material for analysis and parsing. Thus it goes:

'Twas brillig, and the slithy toves
  Did gyre and gimble in the wabe;
All mimsy were the borogoves,
  And the mome raths outgrabe.

"Beware the Jabberwock, my son!
  The jaws that bite, the claws that catch!
Beware the Jujub bird, and shun
  The frumious Bandersnatch!"

He took his vorpal sword in hand:
  Long time the manxome foe he sought—
So rested he by the Tumtum tree,
  And stood awhile in thought.

And as in uffish thought he stood,
  The Jabberwock, with eyes of flame,
Came whiffling through the tulgey wood,
  And burbled as it came!

One, two! One, two! And through and through
  The vorpal blade went snicker-snack!
He left it dead, and with its head
  He went galumphing back.

"And hast thou slain the Jabberwock?
  Come to my arms, my beamish boy!
O frabjous day! Callooh! Callay!"
  He chortled in his joy.

'Twas brillig, and the slithy toves
  Did gyre and gimble in the wabe;
All mimsy were the borogoves,
  And the mome raths outgrabe.

This nonsense lyric is ideal material for the offices of the zealous diagrammer. In my mind's eye I behold it beautifully displayed upon the school blackboard in symmetrical sausage-links. Someone, I recall, became quite enthusiastic over the word "chortled." Since we need a single word to express the idea of talking nonsense, I believe "chortled" would fill a useful place. To my notion, these children have been "chortling."

10:00. *A sixth-grade class in language.*—These appear like bright pupils, and the teacher's every word and look denote poise and power. I shall settle down for a half-hour of solid comfort. I note a small dictionary on each desk, but no other text-book. The teacher is reading aloud—can I believe my ears?—Lowell's "Vision of Sir Launfal"! Apparently this is a class in ear-mindedness. But surely this is no suitable text for such purpose. For even if they had the text before their eyes, sixth-year children could not instantly comprehend the bare thought, to say nothing of appreciating this poem in its delicate imagery and its numerous contrasted pictures.

The teacher reads:

The drawbridge dropped with a surly clang,
And through the dark arch a charger sprang.

"What is a charger?" Recourse is instantly had by all to the dictionaries, and an acceptable definition is presently deduced. But if the next line had been read, either by pupils or by teacher,

Bearing Sir Launfal, the maiden knight,

time need not thus have been wasted by a score of children in looking up the word "charger." This is an extreme example of inexcusably bad method directly in opposition to the teachings of that wise man, Dr. Alexander Graham Bell. Several more lines are read by the teacher rapidly and well, with two or three pauses for the direction, "*Now make the picture;*" and so this absurd mixture of supposititious visualization and ear-training goes on, because, forsooth, it is supposed to be "pedagogic" and

"psychologic." Ah, welcome is the usher! I could almost shed tears over this exercise. A brilliant teacher, an able class, a noble poem—but the combination a mere misfit. Oh, pedagogy, what crimes are committed in thy name!

10:30. *A fourth-year class in language.*—Another capable and charming teacher. The general subject is the King Arthur myths, and attention today centers upon the adventures of the fair-handed Geraint which result in his being knighted by Lancelot. A quick review is given yesterday's lesson for the purpose—of all things unsuitable!—of emphasizing the paragraphs it contained with the topic of each. Here is college composition work babyfied with a vengeance. Paragraphing for infants, I perceive, is one of our newest fads, and this although the subject is purely one of logic and of chief import to the maker of literature, not to the reader thereof. For the vast majority of pupils in the public-school grades who will never reach the high school this is about as complete a waste of time as could well be devised; and for the advanced student of logical mind, who has begun writing in earnest, the subject is one which will well-nigh take care of itself, since it is largely mechanical. Thus are these babes and sucklings made to begin at the wrong end of literature, the critical end. No surer way could be taken to prevent their becoming creative. Was there ever another school system, I wonder, so coarsely spongy as our own, soaking up thus as it does every device exploited by anybody and everybody in the name of education, and this, whether it be meat for man, or milk for babes, or wine for tippling youth?

At all events, this teacher reads these dear old myths delightfully and they are suited in grade to those who listen. However, the quaint diction somewhat lessens their value as material for training in ear-mindedness. Moreover, ear-mindedness comes more by nature than by acquirement, and most of these pupils are now chiefly eye-minded. These, at least, should be allowed to have the text in their hands; and, for that matter, so should all who prefer. Isn't it odd that our school system should take its pupils wholly ear-minded at entrance, neglect to avail itself of that ear-mindedness for several years when it would be of most

use in acquiring a wide vocabulary, and then, after having inculcated a pretty general eye-mindedness, should in fourth, fifth, and sixth grades waste precious hours in attempting to undo what it has labored so hard to accomplish? Truly, wonders will never cease—wonders of folly, at least!

The only redeeming feature in this "recitation" is the admirable reading of the teacher. Every word falls like a bell-note, sweet, clear, and appropriate. The pupils seem to follow Frost's easy version with little need of explanation. They evidently enjoy the recital and are interested in the story. Ah, now she is through with the reading for today. She begins to discuss—the story? Alas, no; the paragraphs they shall make in their written work from the portion of the story which has just been read aloud. Heavens! I am humiliated to the depths of shame for my own country's school system. So this specious display of epic literature was for no good end in itself after all, but merely a thing whereon to hang written memory tests and drills in the logic of paragraphing; and this memory test is made to depend also upon the ear-mindedness of each child! Thus is the pure joy in beautiful literature for its own sake buried in the hearts of these poor children under an Egyptian pyramid of anxious care. This is cruelty to human animals. I cannot endure listening longer, and I shall not await the arrival of my usher.

10:50. Another grammar class, and the same teacher as in class number one. I shall have only ten minutes here as it is almost time for the intermission. Ah, what does that girl say?

> . . . . And over the breast
> Of the glimmering lake he spread
> A coat of mail, that it need not fear
> The downward point of many a spear
> That he hung on its margin, far and near,
> Where a rock would rear its head.

"*Need* is a form in which the *s* of the third person singular is omitted. It is in the indicative mode," and so forth. Well, well, well! and was it in this room an hour ago that this teacher taught English subjunctives? I have seldom seen so striking a proof that the study of mere grammar does not develop the

grammatical sense. Here is a subjunctive beyond doubt, if we ever have one, yet it is not even recognized as such by the class nor by the teacher, although the latter is indeed author of the textbook in his own hand. How long, I wonder, will grammar be called a "practical" study? For my part, I am thoroughly delighted over the blunder. It merely proves what all great scholars claim, that grammar is largely a waste of time with pupils below high-school grade. This teacher is certainly a more than average grammarian, but he evidently has not the grammatical nose, which scents out as if by instinct the delicate flavor of the subjunctive. And what of it? Neither have all except one or two persons out of every thousand; and, hence, what need to teach subjunctives at all, except in high-school or college classes? Well, it is really delightful to have one's pet theories thus emphatically confirmed!

11:40. *A class in literature.*—Here I am again in the same room as at first. And so Lowell's "Commemoration Ode" is the literary nutriment adjudged suitable for these students, who seem so mature that I wondered just what "first year" means, as applied to them.

12:10. I have listened in considerable uneasiness while these pupils—mostly girls, of course, for all sensible boys save one have fled the precincts long ago—while these girls have recited *at* the greater part of this heavy poem. We have suffered together, they in striving to render orally the difficult constructions and involved thought, which they apparently do not quite comprehend nor certainly at all enjoy, and I in beholding their evident physical discomfort and nervous strain. Laboring to recall the words, they can hardly enjoy their own rendition. Their emphasis and pronunciation have frequently been faulty. Surely, every teacher of literature should first of all be an accomplished reader, who through the beautiful rendering of noble passages leads her pupils to the same attainment. Another dreary misfit! And how almost pessimistic it makes one feel! Well, I share the pupils' distaste. For this is a heavy poem of occasion, very uneven as to the beauty of its various portions, and best suited to the mature intellect. As a whole, it is ill chosen for adoles-

cents. Is this in fact a class doing high-school work, or is it a "normal" class proper? If it be the latter, these pupils should rather be memorizing and comparing childish stories and merry jingles, and preparing their own collections of the same for future use when some of them will be miles from a good library. They should be cultivating their latent power of selection, through attempting to estimate the practical schoolroom value of numerous bits of choice verse culled from the fair field of poesy from Spenser down to Kipling. Could these sober-looking students enjoy Edward Lear and William Brighty Rands, I wonder, after the long focusing of their mental vision upon a commemoration ode? Truly it seems not likely, and they are losers in the training which would best have fitted them for their future work. How I wish I might ask each one to recite some short fairy tale such as she would choose in a primary grade to foster the ear-mindedness so potent in learning to understand and to speak even one's own language; or to give an anecdote suited to teach indirectly lessons of self-control or of presence of mind; or to render several bits of good magazine verse or of jolly folklore, which should tend to develop vocabulary; or to explain to me her individual test as to what one shall or shall not regard as literature; or to explain how she would seek to stimulate in her pupils a love for the beautiful in their own daily speech. But all this practical sort of thing would be unknown ground, I fear, to students who are drilled chiefly upon obsolescent English subjunctives, and who are taught that *shall* as used in the passage "Whatsoever a man soweth, that shall he also reap" expresses *determination* on the part of the speaker. However, were I but dictator, my "Thus shalt thou do" should indeed express an unchangeable determination that a new and rational sort of language teaching must come into being in American schools.

For far better might children be turned out to pasture than exposed unprotected to the graduated tortures which I have this day beheld. Normal? No! *abnormal* from beginning to end. And this so-called "normal" system can never be aught but abnormal, so long as it creates a false condition and then meets that

condition with theoretical remedies. This exploiting of "model" departments sequestered far from the madding grade's noble strife is in itself a fallacious presumption. For these classes of English-speaking pupils, who have been brought largely from homes of culture, in no wise correspond to the polyglot groups of children forming public-school grades. Hence, even if the work I have seen today had been suited to its end, it would nevertheless still be unsuited to the unsifted collections of "graded" human units in our every public-school building.

Why not abolish these specious "model" departments which serve in effect to instil in hundreds of thousands of pupil-teachers a false conception as to fact and, hence, false ideals and false aims? Indeed, the ablest teacher I have met while visiting three normal schools has assured me that the normal school is not run for the children's good, but for that of the pupil-teachers! "But it would not do to say that publicly," he hastened to add in apology, upon my look of incredulous disapprobation. But why not, at the very least, let these pupil-teachers go out as assistants into congested school buildings, where they will face actual conditions and living problems? And why not let them help make *model schools* of these as far as possible in a quasi-application of the judicious "Batavia" system? The overcrowding of primary grades is the single greatest evil in the schools of America today; but a large body of normal-school assistants giving class or individual instruction even for an hour or two daily in these primary grades would insure a marvelous improvement all along the school line. Should this be done, no longer would there be as now a doubtful excuse for the existence of the American normal school.

This school, I remind myself, is no second-rate institution. On the contrary, it is doubtless one of the best in America. I shall not venture, I believe, to visit others less high in public esteem, lest I again behold these and similar follies, such as I fain would have become forgotten even by my subconscious self. Truly our great American school system is topheavy with a hydrocephalus which only heroic surgery can possibly relieve.

And what if the patient die under the knife? Well, better death than chronic disease, a bedridden patient, and final atrophy.

"Normal" lines and methods, being interpreted, seems to mean the magnification of means rather than ends, through over-elaboration of specific details supposedly in accord with the dictates of pedagogics and of psychology. A *little* psychology has indeed proved a dangerous thing for thousands of American teachers. I have visited today chiefly classes in English because I hold that a generous command over one's vernacular is the main gift which education can confer upon man; but all inspiration and original genius must evaporate from dead-English classes such as I have seen.

However, not this normal school alone, which is one of the best of its kind, but our entire educational system, whether within or without normal-school walls, should be cited to appear at the bar of American public common-sense, and there, pleading guilty to much ignorant evil-doing, it should give pledge for thorough reformation. Well, peace to these ashes! and may the phoenix of a New Education yet arise therefrom!

COOKING IN THE ELEMENTARY SCHOOL

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There are few exceptions in the answers of little children to the question, "Do you enjoy your cooking?" Certain it is this activity affords to a majority of children a pleasurable experience, hence they admit they have an interest in it or "like it." To analyze this interest we find it need not arise alone (especially with children above Grade II) from a feeling of anticipation and accomplishment, but, under favorable conditions, it comes in some measure from mental growth, or is an intellectual interest.

This opportunity for the development of an intellectual interest is often neglected by teachers of cooking in the Elementary School. We flatter ourselves into believing that to arouse the social instincts and promote skill is the aim and end of the work. Surely this is something, but the growth and further acceptance of this branch as a school subject must come from this broader view; a view which includes not only the children and special teacher but the class teacher as well, and can only be carried out where such co-operation is possible. The object of this paper is to give an illustration of work from this point of view.

The work of Grade III centers about trade and trade conditions. The children discuss the beginnings of exploration and travel and develop a feeling for the growth and expansion of industrial and social life. It is from this thought that the following piece of work found its place.

The children were bartering and exchanging things of one section of the country for products of another: food-stuffs native to a moderate climate, for food-stuffs of a warm climate, as Illinois and California. Grapes were offered from California many times in trade, when one small child objected and said, "I can't take any more grapes, I just can't. I have so many now I can't sell them all." The salesman immediately saw the difficulty and

offered raisins. "Yes. They'll keep and if I don't sell them all now it don't matter." Raisins were then discussed with the children. "What are they?" "Where do they come from?" "How do they grow?" "What kind of grapes make a good raisin?" Thus the children were eager to learn more, and it was planned to make raisins, and find answers to many of these questions.

Several varieties of grapes were obtained suitable and unsuitable for raisin making, and suggestions were given for their drying. The Concord, Cornican, and Tokay grapes were carefully weighed and placed in various places to dry. Some were hung in the sunshine out-of-doors, some were placed on the radiator, and others were put in a sunny window. Observations were made from time to time. All the grapes were noted to shrink and shrivel with a decrease of size and weight. Those on the radiator dried most quickly but did not produce as fine a product as the sun-dried fruit. The grapes in the window lost weight according to the following record:

October 18, 4 oz of fruit.
October 21, 3½ oz. of fruit.
October 25, 2 oz. of fruit.
October 31, 1½ oz. of fruit.
November 4, 1 oz. of fruit.

The grapes on November 4 were compared with store raisins and determined as "finished." From a comparison of the varieties the Concord were declared unfit for raisin making; the Tokay fair; and the Cornican good. (Could the White Muscat raisin grape of California be procured, still better results could be obtained.)

The children then wished to make an individual bunch of raisins. Parts were read or told them concerning "Raisin Curing" in *California Fruits*, and the chapter on "Grapes" in Carpenter's *How the World Is Fed*. This gave a clear picture of the real operation. Each child then weighed one-quarter of a pound of Cornican grapes, placed them on an individual rack made for that purpose, and set them in the sunshine. On each box was marked the date of starting and the weight. Each week additions were made to the record as new weighings were made.

In the reading it was found that the Spaniards make raisins by dipping grapes in a boiling solution of lye (one pound of lye being used to three gallons of water). This the class imitated by hanging the grapes on a long stick and dipping them quickly into the boiling solution and then into clear cold water. They found that the grapes shrank and that the flesh was cured more rapidly by this process; but the product was not comparable with the sun-dried fruit.

Thus far the exercise interpreted to the child a simple "product-making" process, an illustration of value, but by no means the highest value; nor did the work stop at this point. The children themselves were stimulated, during the manufacture to further questioning. To answer these questions lessons in science and mathematics were necessary.

Previous to this work the class had made grape juice, and as the raisins dried the children remarked, "All the grape juice is drying up, the raisins won't be any good." "But raisins are good, I think," said John; "maybe the good in the juice don't get out." So the class set about to find what "got away" or evaporated. Grape juice was again tasted and examined. Cloths were then moistened in it and dried by the children. "What had dried out?" "What remained?" Grapes were also boiled and the vapor caught on cold glass. Grape juice was distilled, and the distillate and residue tasted. One child suggested a grape be dried under a glass case and see if juice or water came out as the drying went on. The experiments were convincing that water alone evaporated and all the goodness of the grape remained. "It is the same as drying your hands in the sunshine," said one small boy, "the hands do not get away, just the water on them."

Then another question. "Why were the grapes so long in drying?" To meet this, four grapes were placed in a row, three of equal size and one very small one. The first grape had the skin entirely removed, the second half peeled, and the last two were intact. Observations made from day to day indicated that the skin had a great deal to do with the rate of drying, as had also the size of the fruit. This gave a new notion concerning the

covering of the fruit—a point which will later be amplified in the lessons on "Parts of the Fruit."

Quantitative work on evaporation then followed to enforce and clear the ideas: (*a*) that surface exposure influences evaporation; (*b*) atmospheric conditions influence evaporation. Equal quantities of water were placed in deep, shallow, covered and uncovered vessels, and placed under the same conditions to observe the rate of evaporation. Equal quantities of water were placed in dishes of same size and shape and placed under different conditions of exposure. The comparative rate of evaporation was carefully observed and conclusions were reached for determining favorable and unfavorable conditions for evaporation. Application followed in discussing good days for drying clothes, and when to use and when not to use the cover on the cooking-pot.

No less important was the mathematics for carrying on this interest. The scales must be understood, the tables of ounces and pounds, pints, quarts, and gallons learned, the multiplication table of 3's and 4's drilled upon, and simple problems in addition and subtraction practiced. The records kept from time to time (as record of drying before given) gave basis for concrete problems as: Find the loss of water for the first four days; Find entire loss; Find the proportion of raisins to grapes; Find the necessary amount of grapes to make one pound of raisins; What is the cost of one pound of raisins if one pound of grapes cost 8c; Compare with cost at store; What is the amount of raisins produced from one of the large California trays of twenty-four pounds of grapes? Also each child had his individual problems from the record of his special tray.

The making of the tray was also a neat problem. Each had a one-quarter pound bunch of grapes for drying. Three or four of these bunches were measured and it was found a box 3×5 on the bottom was suitable. It was then for the children to determine the size of the paper to cut for the entire box with a depth of one inch and the size as before mentioned.

Without the co-operation of the class teacher, such work is impracticable, even if possible. The greater part of the mathe-

matics and science of the grade must be carried on by the class teacher, and she needs this concrete work as a basis for such lessons. Also a large part of the cooking period must be laboratory work, but of such a nature that it need not stop here. It is high time for schools, where cooking is taught, to recognize this broader value and allow its worth to be estimated in terms broader than "a favorable cup of tea" or "a suitable sandwich."

THE TEACHERS' VIEW OF THE METHODS USED TO INSPIRE PROFESSIONAL INTEREST[1]

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In the spring of 1907, the Department of Education of Indiana University undertook an investigation to determine, if possible, the superintendents' and teachers' views of the methods employed to stimulate professional interest. The following questions were sent to teachers in different cities of New York, New Jersey, Missouri, Indiana, Minnesota, and Ohio:

1. What has aided and inspired you most as a teacher?
2. What assistance from superintendents (or supervisors) has been most helpful? Visits? Teachers' meetings? What kind of teachers' meetings have helped you most? Personal interviews?
3. Can you suggest anything more helpful to teachers than the means now employed?

To assure free expression, the teachers were requested to send their answers directly to Bloomington. About one hundred fifty answers were received. Whether the teachers really have expressed themselves frankly will probably be disputed. Nor can I decide the question. Our ideals are apt to speak when we record ourselves in black and white, but these ideals express our true selves.

This article will report a study of the teachers' answers under the following heads:

1. The teachers' attitude toward their work.
2. Their view of supervision.
3. Visiting other schools.
4. Teachers' meetings.
5. General suggestions.

[1] From the Pedagogical Seminary of Indiana University, J. A. Bergstrom, director.

1. Judging from the answers received, there is among teachers a prevailing spirit of earnestness and serious appreciation of the great responsibility resting upon them. They show a religious attitude toward their work, together with an intense desire for self-improvement. More than half the answers say that the greatest inspiration comes to the teacher from the children. They speak as if they were commissioned to promote the betterment of humanity. One calls herself a "Crusader against ignorance." All feel it a privilege to be of help, and ask in almost an injured tone, "Could any other inspiration be needed to make us realize that we have chosen the highest profession—the molding of the lives of the young?" Frequently an answer is stated thus: "If I could know that the boys and girls leave me a little better prepared for citizenship, for the duties of manhood and womanhood, I would feel that my efforts have not been in vain. Let each teacher have a deep and abiding love for each soul intrusted to her care and the knowledge of duty well done will bring joy and courage to continue." Numerous replies are as follows:

"That which has aided and inspired me most as a teacher has been the happiness derived from my contact with the children."

"The response, sympathy, and friendship given by the pupils."

"The encouragement received from pupils when they have grown several years older and they express their gratitude for the help received from me, while in my schoolroom, has aided and inspired me most."

These answers prove that most teachers are keenly sensitive to their duty and responsibility, and humbly appreciate their power to do good. Part of this inspiration which they receive from the children is possibly due to the feeling of success in their work. Indeed, several acknowledge this fact:

"The greatest inspiration to me is to see results from my work with the children."

"The encouragement that comes when one's own teaching shows successful results."

"This may seem egotistical: that inspiration is found in the

successful termination of one's own efforts, but nevertheless I believe it is true."

Psychologically, it is undoubtedly true; but these teachers at the same time mention their love for children, and in their replies show devotion to their work.

Accompanying this religious attitude is a strong desire for higher scholarship. They feel the need of better preparation. One woman replies to Question 3, "A more rigid requirement for a license. Before a young person enters the teaching profession, he ought to be quite familiar with what is being done and what has been done by the most proficient men and women of the profession. He ought, also, to be a very close student of human nature. Such a student as only a somewhat extended study of psychology and pedagogy can produce." Another writes: "Require higher qualifications." Many long for the opportunity to travel and attend schools, and suggest that scholarships, like those given in Indianapolis, be awarded talented teachers.

In most cities there are classes, reading-circles, literary clubs, formed among the teachers. A letter received from a woman who once taught, speaks forcibly against these intellectual stimuli. She says: "The pleasure of study comes not from outside pressure." This truth is self-evident, but the history of these organizations proves that they originated among the teachers themselves. Upon inquiry, Superintendent Small of Providence, R. I., learned that two-thirds of the high-school and grade teachers had been studying either at the Rhode Island School of Design, or Brown University. "The general feeling of these men is that study is necessary for their own life and growth. As one puts it, he 'wants the tonic that comes from outside study.'"

Superintendent Small goes on to say, "It is surprising to what an extent *mood* has carried these teachers in their studies. Some have pursued systematic work for ten, fifteen, or twenty years, and they are still working." To the question, "Should teachers be *required* to present evidence of increased scholarship?" he answers, "No. The mood for increased scholarship is inherent in the good teacher."

This strain which teachers feel, I believe, is not due so much

to the work which they do, as to the nervousness caused by examinations. Some teachers are evidently taking university extension courses at the same time that they attend institutes and reading-circles. They must take the examination for their university credit as well as the state examination. In general, a teacher who is ambitious enough to wish to do university work will see to it that he is well informed in the subjects he is expected to teach. He will gain a great deal more from classwork than from a superficial preparation for examination. As one teacher states: "A large majority of the teachers here are availing themselves of the educational courses extended by the college in our vicinity; and while following this line of work, are suddenly confronted by the reactionary movement on the side of state officials toward a return to the former periodic examinations for 'teachers' license.' If a teacher who is a student keeps in close touch with the pupils by being herself a learner, why should she not be accorded recognition for her college credits while climbing the hill, as well as after she has reached the top? Yes, more credit! Could not the colleges and universities act in conjunction with the state board of education in the grading of a teacher's standing? If such an arrangement could be worked out and put into operation, it would relieve many of us from the feeling of being goaded on all sides." This seems a reasonable request and deserves consideration.

A more ideal spirit than the combination of these two, the devotion spoken of above and this striving "mood" as a basis for the profession, can scarcely be imagined, and this is certainly a striking feature of the answers received.

2. Teachers have expressed themselves quite freely about supervision. From their answers, I conclude that practically none think that it can be dispensed with. It may be that they think otherwise, but only one speaks of the danger of over-supervision, and volunteers the remedy of having a supervisor for a month or six weeks about twice a year. Radically opposed to this teacher's view are those who state that each building should have its own supervisor, and those who say, "They (the supervisors) ought to come oftener and stay longer."

There is a general agreement in the fact that successful supervision depends upon the personality of the supervisor, or the superintendent. One goes so far as to say, "The influence of their visits depends nine-tenths on their personality." Another remarks, "Superintendents and principals should be persons of strong personality; of such faith in the work that we constantly feel a desire to do better." One claims that the greatest need today is inspiration from earnest leaders.

The characteristics of supervisors which receive favorable mention are enthusiasm and sympathy, as the following quotations show:

"Coming in touch with one who put her whole heart into her work has been a source of great inspiration to me. She was so enthusiastic that one could not be in her presence long without catching her spirit."

"One help I have always had when discouraged—my principal. She does not know what despondency means, nor can I when she talks to me, for in every storm her eyes can see the haven."

That supervisor is fortunate, indeed, of whom the following has been said, "My principal has a very pleasing way of offering her criticism. I do not realize at the time that my methods are being criticized. I try her suggestions because they are given as such, and find that her way is better. If she had done otherwise I should have been discouraged."

These quotations suffice to show the appreciated qualities of supervisors. Probably the greatest mistake of supervisors is lack of giving enough encouragement. It is sad that a teacher quotes from Dr. Hillis' *Quest of Happiness,* "This is an age of harsh judgments, cruel criticisms, and brutal blamings." Another puts it more mildly by saying, "The superintendent can be of great assistance by talking with the teacher about her work and giving her a word of praise when she deserves it." Still another says, "The fact that he always spoke a word of encouragement in regard to some point of success, at the same time that he pointed out mistakes, inspired me to accomplish better work. This I believe is *very* important in helping teachers."

"A little commendation from a supervising officer does much in the way of help. The average inexperienced teacher has not much confidence in her ability and she needs it before she can succeed to any great degree. I remember very well a time in my early years of teaching when I received a little commendation from a conservative person, in whose judgment I had great confidence. It was like a tonic. I think it helped me to grow in my profession more than all the criticism that was ever given me. Criticism is bad enough when it is coupled with a little commendation, but it is positively deadening without it. Under commendation, and not criticism, one finds his power."

Perhaps these quotations are convincing enough to show how much the teachers feel the absence of encouragement from conferences with supervising officers. They feel most keenly haughty, overbearing conduct on the part of supervisors. Note this reply, "In personal interviews more help is obtained by the sympathetic appreciation of a supervising officer than by supervisory airs and a general attitude of criticism." One emphatically states that "children at once detect a critical attitude." Another says, "Visits are helpful when the supervisor is sympathetic and enters into the work, and when he talks over the work after the lesson. The supervisor who is an inspector only, may help the system, but he is of little help to the individual teacher." Another asks, "Could not the supervisor give more attention to environment and work *with* the teachers rather than *over* them. In case of weakness could he not help them even as they strive with children to know the cause of failure, and to remove the obstacle?"

I believe that this is exactly what supervisors strive to do—to study the special power and need of the individual teacher; to be of help in developing every talent, and in overcoming difficulties. If they fail it is not due to lack of effort. These same things about which the teachers have complained have given superintendents and supervisors much occasion for thought. This fact would be acknowledged if all teachers could have heard Miss Harris, supervisor of schools in Rochester, N. Y., when she spoke to the superintendents at Louisville. In her paper she

answered every criticism of the above quotations. She says, "The supervisor is not to sit in judgment, or to act as a disciplinarian; but he must be a sympathetic counselor who will guide the young teacher into right ways of teaching, and the older teachers, who do not understand the meaning of the course of study, to a wiser and clearer interpretation of the same.

"The function of the supervisor is not that of a police officer, nor of a detective to spy out weak teachers, nor even that of a critic; but primarily that of a helper and guide.

"The supervisor needs to carry into every classroom: one measure of ability to put himself in the teacher's place . . . . two measures of the saving sense of humor; three measures of appreciation for the effort put forth; four of timely suggestion; and five of stimulating words of encouragement and commendation."

As heartily as I believe in the excellent spirit of most teachers, I believe that the above quotations from Miss Harris's paper express the spirit of most supervisors and superintendents.

The teachers in their replies generally acknowledge that their greatest help from supervisors comes to them through personal interviews:

"By far the greatest assistance that comes to me is from my principal, and that chiefly through personal interviews. His sympathy, appreciation, and ever-ready helpfulness are of untold value."

"The greatest aid to me as a teacher has been the help given me by my principal. She has always criticized my work in the form of suggestion."

"Personal interviews in which definite lines of improvement were suggested, so that a certain result could be worked for, were most helpful."

One teacher offers as a suggestion, "More personal interviews with supervisors after their visits, when points good and bad would be made."

That these interviews ought to be frank seems an unnecessary statement, yet some teachers feel that they are not so. One remarks that "personal interviews are rarely honest;" and an-

other states that, "A superintendent or supervisor who can get a teacher to talk to him of her problems, as she would to a fellow-teacher; and who instead of talking all around and outside the subject, or acting as if he would rather not be bothered, can and will give advice that 'will work,' is one most helpful to the individual teacher."

One feature of a supervisor's visits needs consideration, viz., that of interrupting the recitation. Though some consider it helpful, others strongly disapprove. One says, "The superintendent has helped me by visiting my school and taking part in a helpful way;" another that, "Visits in which supervisors and superintendents take part in recitations, followed by personal interviews when there has been perfect frankness on the part of both, are most helpful." Opposed to these views is the following: "I think supervising officers of all kinds, whether principals, supervisors, or superintendents, should be prohibited from going into any room where a recitation is going on, and addressing the teacher or class until the lesson is ended, or until the teacher gives some intimation that such a thing would be welcome. I think the average superintendent is thoughtful in regard to this point, but many principals are not. They do not recognize what someone has indicated as the 'sacredness of the recitation.'"

No doubt, interruptions, which can be interpreted by the pupils as adverse criticism upon the teacher, ought never to occur. On the other hand, limited time prevents the supervisor's having a conference with each teacher after his visit. Therefore, in the beginning of the year, the supervisor can explain to his teachers that some time by a mere question during the recitation he can give a suggestion. If, however, the teachers prefer otherwise, their wishes will be respected. Some superintendents adopt the plan of writing out criticisms or suggestions and leaving them on the teacher's desk. Their writing in the presence of the children, however, disconcerts a self-conscious teacher. It has been my experience that it often strengthens the pupil's confidence in the teacher to commend at the close of a recitation. The teacher surely understands that the compliment is for her, while the pupils are pleased since they take part of the "well

done!" to themselves. This generally produces a very happy result.

In the answers the teachers repeatedly express the desire that the supervisors take their classes for them. This is most helpful to them since the supervisor or superintendent teaches those children with whom the teacher is accustomed to work. To quote from two replies: "I cannot think of anything more helpful to me than my supervisor's conducting a lesson for me."

"It seems to me that it would be a great help to teachers if the supervisors would conduct a lesson as they would like to have it done by the teachers."

No doubt this method of giving help has one advantage, viz., the teacher observes a person of wide experience meeting the conditions which he is trying to manage; yet the teacher must recognize certain disadvantages:

In the first place, it is almost impossible for a supervisor of a thousand or more children to know the individual names. This immediately puts a gulf between him and the class.

Second, he cannot know the individual minds as well as the regular teacher.

Third, the children are not accustomed to the supervisor's manner of questioning.

And fourth, the supervisor has not seen the successive lessons leading up to the lesson he is to give. Consequently, in the preparatory step he is apt to call for knowledge which the children do not have. He deems it necessary to teach what he supposed already taught, and does not reach the step the teacher expected. As a result some teachers are apt to pronounce the recitation a failure.

In the report thus far, I have tried to present what many teachers think of the individual help received from supervisors. Of the means employed to help teachers collectively, "visiting other schools" and "teachers' meetings" are most frequently mentioned.

3. I judge from the answers that teachers regard visiting as the best of all the methods for inspiration, especially if they see

a "successful teacher under every-day conditions." I quote from several replies:

"My visits to other schools have been most helpful when the teachers had regular work. I want to see errors made by the pupil, and see the teacher deal with them. Perfection is uninteresting and valueless, unless one can see how it was attained."

"Actual teaching that I have seen has helped me more than all talks. If some means could be devised by which teachers could see excellent work, I think they would be helped much more than by lectures."

"Visiting other schools, whether good or bad, has helped me to see the need of my own, to correct faults, and to strive for better results. Theory is good, but nothing can quite equal the seeing and doing."

"I have received my greatest and most inspiring help from visiting good schools. I mean by the really good school, one in which the teacher's love for her profession and love for the children are manifest in her work—where children's minds are developing in a fine, harmonious atmosphere. There isn't anything that anybody can tell us that is half so great a thing as this—actually seeing it done, naturally and beautifully, under the charm of someone who knows just how to do it, and who loves to do it."

"Visits are always helpful. I believe the observation of specially prepared lessons quite good. It sets a standard toward which to work. But even though the work observed be ordinary, it furnishes food for thought. Our very errors may be forcibly brought to us when observed in another."

Some answers lead me to think that there is a great deal of haphazard visiting done, from which the teachers get little help. Many express a desire for "directions for visiting;" others, a wish that they might visit their own grade in company with other teachers, and that the observation might be followed by a discussion.

Beside the general idea of observing the work of someone else, the definite purpose of the visit should be made clear to the teacher before he is sent. A superintendent has one of two

objects in mind when he sends teachers to visit, either to give inspiration to a number of teachers by having them observe unusually good work, or to give help to an individual teacher in a particular line.

In the first case, the teachers derive the greatest value when they visit an unusually strong teacher who accomplishes his results artistically. They should know what things to note—the teacher's manner, voice, questioning; the amount accomplished in a recitation, etc. At about a quarter, or half-past eleven, the pupils should be dismissed and a conference held with the teacher visited. This discussion, opened by the superintendent or his representative, followed by the teachers' expressing the definite help received, and questioning the how and why of method, throws a searchlight on the work observed.

When an individual teacher is sent to visit, his particular need should be especially considered. If his weakness lies in organization, the school chosen for his observation should be particularly strong in organization; if he lacks ingenuity, he should visit a teacher of inventive genius. Before the visit he ought to be told wherein he fails. The visit is most valuable, if he is accompanied by the superintendent or supervisor. Some teachers mention that they get more if the supervisor goes with them, and afterward talks of the work observed. If it is possible to accompany a teacher, a conference should follow the visit, to ascertain if he actually has seen what he was sent to see.

In every case teachers should know where they are to go. If left to chance they often return irritated to their own work, feeling that the hours were wasted. Furthermore, some of them need instruction in how to gain the most from visiting.

One teacher remarks that, "The right kind of visitor is an encouragement to the teacher." This leads me to ask, what is the right kind of visitor? It seems to me that it is neither he who comes to see only the good (which seems to be one teacher's idea of visiting), nor he who comes to find fault; but rather he who comes with a scientific interest to study the moral and spiritual atmosphere of the schoolroom, and the teacher's method of instruction. Therefore visiting is professional not personal.

The visitor comes to examine and to learn. In the attitude of the learner, he welcomes and rejoices in all that is good and weighs method in the spirit of the student, not that of the fault-finder. If at the close of the visit the guest expresses gratitude for his privilege, points out what he liked and states in what way he has been helped, he may without fear of being misunderstood ask a question as to why this or that was done. Thus both teachers begin to weigh the merits of their respective methods. The exchange of experience is mutually helpful. This spirit of sympathetic interest is like the gift that blesses him who gives and him who receives.

4. From the answers received, I conclude that teachers' meetings, as a means of inspiration, rank next to visiting. Here again, superintendents may find encouragement in the assurance that every kind of teachers' meeting has been an inspiration to some individual. Though "a large meeting to hear some splendid address" has helped some more, others wish that there might be smaller circles where everyone would feel free to express himself.

There is a general agreement that the grade meetings are most helpful, especially when they consist of lessons given by teachers, followed by discussions something like "experience meetings," in which they compare notes and discuss individual problems. Again the teachers voice the desire to see "practical schoolroom work with average children," for many of them answer the question, "What kind of teachers' meetings have helped you most?" thus:

"The teachers' meeting where the manner of doing the work is demonstrated in regular class recitation, and not a 'show,' or 'cut-and-dried,' 'polished-till-it-shines' lesson; and then an open discussion of its merits and its faults."

"Those in which I have seen the regular class work done, and in which children make mistakes, so that I may see how others overcome them."

Hence some suggest that advanced work be presented in these lessons. One teacher offers a programme:

a) Outline of points to be made in the hands of the teachers.

b) Class demonstration by one of the regular teachers.

c) Discussion of large points in light of demonstration.

d) General discussion and concrete application to regular work cited by teachers.

The statement, "We have too much theory and not enough demonstration," made by a teacher summarizes fairly well the teacher's feeling about many of the meetings.

From the study of the answers received, I conclude that in larger places there should be a grading of teachers' meetings, i. e., there must be separate meetings for inexperienced and experienced teachers. Many of the latter comment upon teachers' meetings thus: "They are helpful to young teachers." If we combine some of the suggestions sent in, we may find a partial solution for the difficulty. Might the experienced teachers choose such subjects for these meetings as have for their fundamental principle self-activity in educational research?

A word needs to be said about the number of meetings and the time of holding them. A teacher's strength is greatly taxed when more than one meeting a week is held, or when a meeting continues several hours after the close of school. One teacher remarks that she receives little help from teachers' meetings because they are always held Friday nights after school, and that then she is "too tired to take in anything."

Since the purpose of these meetings is to help the teachers, their physical ability to receive that help must be considered in the arrangement of the schedule of meetings:

First, the teacher's mind is full of so many things in the beginning weeks of school, that many points of a meeting are absolutely lost.

Second, after April, he is so worn out with the year's work that meetings are overburdensome. Consequently, he brings little or no inspiration from them into the schoolroom.

Hence, the best time for meetings is from about the middle of October to the middle of April, with a cessation during the time the children are being tested. Then the teacher has all that he can do to mark papers and prepare lessons to clear up hazy points in the children's minds.

5. Of the many other helps, such as the teacher's associations, lectures, books, etc., many teachers have expressed their appreciation. They resent the narrowness in the choice of subject, however. One says, "In order that our interests and knowledge may be broad, the lectures we attend should not all bear directly upon our profession;" and several say they do not enjoy the study of books that are "thrust upon them." They desire a voice in the matter of selection.

Nearly all the suggestions offered in answer to question 3 are embodied in the above report. Higher salaries, fewer pupils, shorter hours receive mention. These are recognized everywhere as helpful, and will in the course of time be in effect. Therefore, I omit a discussion of them here. One suggestion expressed by several I do wish to call attention to, i. e., a co-operative planning of the curriculum. "It would increase interest through participation. All teachers criticize the course of study more or less, but for the most part unconsciously. I think it (the co-operative planning) is *the* way to get the best work for the children, and a needed means of inspiring teachers."

It was difficult to summarize the replies received, since the teachers' manner of expression is so different. However, by taking some liberties I have been able to classify them. All answers relating to the children: as for example, "watching the development of the children," "love for children," "a sense of the power to do good," etc., have been grouped under the "inspiration received from children." Allowing for this freedom in arrangement the following gives a survey of the answers received:

Seventy-nine teachers say their greatest inspiration comes to them from the children.

Of the means employed, eighty-four acknowledge that visiting other schools has been of help; while some say that visiting has been most inspiring, others say that it has always been of help. Only one says she receives little help from visiting.

In speaking of teachers' meetings: seventy-eight regard the grade meetings as most helpful and more than half of these

say that the meetings are most helpful because of the model lessons given; seventeen speak of the help received from general meetings; and nine, from building meetings.

Every answer contains something about supervision. Ninety-six speak favorably of personal interviews; two, against them. Forty consider the supervisor's conducting a lesson of most help. Twenty-eight express their gratitude for words of encouragement or appreciation. Six speak especially of inspiration from enthusiastic leaders. Twelve criticize an overbearing attitude in a supervisor, and two complain against too much urging.

Forty-six write of inspiration received from strong personalities, either of supervisors, lecturers, or former teachers.

Thirty-three speak of help and inspiration received from literature, pedagogical books, and current magazines.

Five suggest that teachers need more reference books.

Thirty-two teachers speak of inspiration received at lectures; twenty-four, of the gain through coming in contact with earnest workers at county, state, and national associations. Three of these speak especially of the National Educational Association; ten, of the help received at institutes. Two who speak against institutes do so because of the length of the meetings. If the lectures were given at different times through the year, they feel that the value would be greater. Three other answers suggest closer confederations or organizations among teachers.

Sixteen teachers assert the necessity for a broader outlook; seven of these, that a teacher needs more opportunity for study and travel.

Eighteen tell of help received from normal schools; and five, from work in colleges.

Fourteen express appreciation of help received through intercourse with other teachers.

Nine tell of co-operation of parents as helpful; three of whom recommend parents' meetings as an inspiration.

Five speak of the effort which the intense desire to become a "good teacher" has stimulated; one of these says it was aroused through exhibitions.

Six tell of the great help a well-organized course of study

has been; though nine others wish that there might be a better planning, through the co-operative work of teachers with superintendents and supervisors.

Of the other suggestions received, six recommend that greater freedom be given the teacher; eight, higher salaries; five, fewer pupils; three, special schools for defective or incorrigible children; three, fewer examinations; two, that textbooks for children be made more simple; one, shorter hours; one, a larger social life.[1]

[1] I wish to express my appreciation and gratitude to the superintendents and teachers who answered the questions sent them.

THE SCHOOL PRINT SHOP AND ITS POSSIBILITIES

A. F. PROBST
Chicago

In this day of so-called new education when the aim is, or should be, to enrich the mind through the motor channels rather than by precept alone—through the hand rather than through the ear—and where the pupil is surrounded with that healthy atmosphere from which he is ever ready and eager to construct his own problems, there is no greater field and certainly none more interesting to both teacher and pupil than that of manual training. Much has been done in the last few years in the way of providing the public schools with the necessary equipment for athletics and industrial training, and now in the various departments of wood, metal, clay, textiles, domestic science, painting, and drawing, the pupil finds something to *do,* something to his taste, and toward which he has a natural bent. To quote from Professor James:

> The most colossal improvement which recent years have seen in secondary education lies in the introduction of the manual-training schools; not that they will give us a people more handy and practical for domestic life and better skilled in trades, but because they will give us citizens with an entirely different intellectual fibre.

In the midst of all these activities, and while knowing that some of my friends will say that we are already attempting to do too much, I plead for the print shop for our public schools; not that we would make printers or editors of our pupils, but that there is no department in all the school curriculum which offers greater possibilities, or better training and culture, than the well-equipped and well-managed print shop.

While there has never been, so far as I am aware, the slightest objection to our printing department, and while there has been the most loyal support on the part of both school and parents, I am fully aware that in every community there are those who, while they have been able to keep pace with the rapid progress

and advancement in their own particular calling, find it very difficult and often impossible to run, at the same time, the rapid race of educational progress, and thus they oppose not only the more recent methods of instruction but also the newer and more modern equipments of which many of our public schools stand so much in need. So in the introduction of the print shop into the public schools, we meet at the very outset with two principal and common objections: first, on the ground of utility, and second, that of expense. It is from these two points of view that I wish to discuss the subject. In the first place, the printing department should have a large, well-lighted, and well-ventilated room—say 14 by 26 feet—with an adjoining room if such can be had, although one large room can be so arranged as to furnish every convenience necessary to the beginning of what can be made a leading feature of the school.

We have equipped our print shop with a fine Gordon jobber, a large Advance paper cutter, imposing stone, paper cabinet and type cabinet, type racks and cases with forty cases of type, metal and wood furniture, chases, galleys, sticks, rules, spaces, quads, quoines, and other minor accessories for about $500, and while this is not all that we desire, it is serving our purpose admirably and has furnished the nucleus around which we are gathering additional supplies from time to time from the proceeds of the press itself.

Perhaps some of the smaller village and town schools can afford neither the room nor the equipment such as I have mentioned, yet I believe that there are few schools that could not afford a print shop large enough for very efficient work and whose school boards would not be ready and willing to meet the expense if they could be made to feel that the outlay would yield adequate returns. Here, I wish to show that the material of the print shop will yield far greater returns than other apparatus of the school, much of which lies deeply and respectably buried in garret and basement dust. Realizing that material or apparatus of any kind is practically valueless except when in the hands of one who has been trained to use it, I do not hesitate to say that the person who has charge of the school print shop

should not only be a practical printer but a teacher as well. Rarely do we find these two qualities combined in one individual, and if such a person cannot be had, it would be advisable to place the department in charge of one of the corps of teachers who perhaps has had some experience in a print shop and then furnish him with a practical printer from the local press who could give as much of his time to the work as is needed. The success of the printing department, as of all other departments, is most largely due to its management. Without proper supervision and instruction the most elaborate and expensive apparatus is of no avail and it too will soon be doomed to its final resting-place in the garret. The school print shop thus properly equipped yields its greatest returns in an educational way for the school as a whole.

Other departments of the school, and more particularly the English, French, German, history, and mathematics, have found the press very helpful and have been free to take advantage of the opportunities which it affords. For the reading-lessons, especially in the lower grades, the teacher not only selects the best, from any available source, but she composes and arranges pedagogically and psychologically much of her subject-matter, correlating it with other subjects in which the children are interested at different seasons of the year. To print these lessons, then, is the first work of the little printers in the shop. They set the type and print the leaflets in large type—18-point Caslon—and in short lines. The large type is not only less difficult for the beginner to set, but the large type and the short line are easier for young children to read. A number of proof sheets are then sent to the teacher who, together with her pupils, makes all necessary corrections. Here is offered a splendid training in spelling, paragraphing, punctuating, capitalizing, style, and arrangement. The form is then corrected and the lesson leaflets printed. Each child is provided with two leaflets, one for his immediate use, the other to be bound by the children of the bookbinding group into a reading-book, and thus the reader is enlarged by new leaflets as the work of the grade progresses. The teacher of reading in the higher grades also has the advantage

of making her own selections, when it is possible to provide each individual of the class with a printed copy. Some of the finest poetry and best prose, the most beautiful sentiments and quotations can now be furnished the school at the proper time and in the right way.

What these young printers are doing for the English department they are also doing for the French and German departments. The mathematical department also comes in for its share of attention. In the lower grades, lesson leaflets are printed correlating number with domestic science, woodwork, and, as far as possible, with the work of other departments in which the pupil is engaged. In the upper grammar grades and in the high school, textbooks are supplemented by practical problems growing out of the student's own experience in nature, shop, and laboratory.

While the print shop can do all this for the public school, what can it do for the community? That the home and the school should be closely associated and mutually helpful we do not question, and it is the bringing of these into a closer and more normal relationship that the school press performs its second greatest function. In the first place, parents are always interested in the creative and constructive side of education; they not only take great pride and satisfaction in the real *doing* of the thing but, with the children, they manifest an especial interest in the finished product as the child's own accomplishment. While this much might be accorded the other manual-training departments of the school, the press goes still farther. The University of Chicago Elementary School publishes its own school paper—*The University Elementary School Reporter*—which serves as a medium for the exchange of thoughts and ideas between the children of the various rooms, and thus serves as one more point of contact between children of widely varying ages. The school paper, with its staff of young reporters, editors, and business managers, not only furnishes a splendid ethical culture but a real practical business training and in a most fruitful way.

Not long since, a distinguished English teacher visited our print shop and among the many questions which he asked con-

cerning the work was this: "Why do you teach pupils to set type by hand, now that we have the type-setting machine?" This teacher evidently thought that to teach a boy or a girl to set type was the chief aim and purpose of the print shop. Not so, any more than the chief business of the wood department is to produce carpenters. If these young people ever become carpenters or printers, they surely will be none the worse off for having had this early training in the shop, and if they become teachers, preachers, farmers, or what not, this actual *doing things* is the making of a greater man or a greater woman. Again to quote from Professor James:

> Laboratory work and shop work engender a habit of observation, a knowledge of the difference between accuracy and vagueness, and an insight into nature's complexity and into the inadequacy of all abstract verbal accounts of real phenomena, which once wrought into the mind, remains there as lifelong possessions. They confer precision; because if you are *doing* a thing, you must do it definitely right or definitely wrong. They give honesty; for, when you express yourself by making things, and not by using words, it becomes impossible to dissimulate your vagueness or ignorance by ambiguity. They beget a habit of self-reliance; they keep the interest and attention always cheerfully engaged.

Thus, while the community, the teacher, and all the children in the school derive from the print shop a peculiar advantage, differing in kind from that of any other department, the little printer, in his *doing* the thing with a consciousness of its immediate need and value, is beginning to feel that he is more than a mere pupil of the school, that every day he is a real contributor to the welfare of the school and of the community, and thus, unconsciously, perhaps, receives the most valuable training and culture that is possible for the school to give.

In conclusion, I wish to answer the question which is sometimes asked: "Does the print shop pay financially?" To my mind, there is no other manual-training department in the school which can be made to yield larger financial returns in connection with its educational training than the print shop. The school paper has much more than paid its way, and while we have done no printing except for the school, we have realized nearly $300 from the print shop since its introduction into the

school a year ago. This amount represents the proceeds from the school calendar in which the whole school had some part in its making and will ultimately share in its benefits.

Can the public school then afford a print shop? I answer, certainly it can when it can be made to yield such large educational and financial returns. Introduce the printing-press into the school, place its management in good hands, and its success is assured for certainly its possibilities are great.

ELECTRICITY AS A SUBJECT FOR STUDY IN ELEMENTARY SCHOOLS

PART I

L. DOW McNEFF
Seventh-Grade Teacher, The University Elementary School

For intense and dramatic interest, there is nothing in the realm of forces which equals that inspired by electricity. To the boy in particular, it opens a fairyland into which he needs only an introduction to be charmed and made a willing captive.

In this age of Titanic achievement in the mechanical world, when space and time are being annihilated, when there is such wonderful progress in the manipulation of raw materials, when almost in a flash nature's stores are transformed into articles of service to man, when the realms that have hitherto been unexplored are suddenly transformed into regions of light for man's searching eye to probe, when the infinite oceans of air are pierced and made to vibrate in harmony with man's intelligence, one turns breathless and bewildered with awe to that mysteriously silent and mighty force, electricity, more wonderful in reality than the Genii of the Arabian Nights in story. Were Aladdin brought to life in the twentieth century he would find that man had found an easier way to realize one's wishes than by the process of rubbing a lamp. Now he merely presses a button, or turns a lever and presto! the Genius of Electricity, flashing, silent, and mighty, is at his command, ready to leap through space in defiance of time, or to unite with the might of Thor's hammer. But, wonderful as this is, the first few letters of the alphabet only have been deciphered in the story of this mighty force.

Electricity appeals to the imagination. All of the race experience with fire, that gift of the gods which has done so much to establish man highest in the animal kingdom, is suggested by it, and all the mysticism of the flame which subconsciously we feel when near the glow of a campfire, or by the grate, exerts a

subtle influence when one is near the sparkling and crackling flame of electricity.

Space and time, the two great obstacles to free communication, have been comparatively conquered by this rival of fire, and little by little it is bringing the world together into one vast social consciousness. Interest is always intense concerning things of promise, the potential, with which the imagination ever busies itself. So it is not only because of man's past conquests in the field of electricity but also the promise of still greater achievements that accounts for interest in this subject.

Almost everyone has noticed the natural interest which many boys, city boys especially, have in electricity. It is often a dominant spontaneous interest at some time between the ages of ten and fourteen. Contact on all sides with the electrical world undoubtedly induces this interest.

As an evidence of this witness this paper which was written last year by a seventh-grade boy in the University Elementary School:

MY SHOP

I began working with electricity and mechanics when I was about eight years old. The way I got interested in this was through a boy friend of mine whose father was an electrician. I used to go to his home and watch him, and soon I got a little shop myself. I had a few batteries, a bell, and some wire, and I made push-buttons and switches out of tin. I got some sal ammoniac and made little batteries of carbon and zinc in jelly glasses. Soon my father had our barn made into a garage, and when he did this he had a room fitted up for me on the second floor, and I moved my shop from the basement of our house to this room. I got some tools and a lot of old iron and wheels and a lot of other things and put some of these things in the shape of telegraphs, little bells, and motors, but I couldn't get a motor that would run for quite a while. Soon I got a small lathe and emery wheel, and drill-press attachment? Soon after this I got interested in chemistry and put a chemical outfit in my shop and I am there now most all the time.

A little while ago I made an electric furnace which gives a lot of heat. I use this in chemistry for making metals.

A little after this I got a motor to run my lathe and I am making a pump to run by it to get air to run a blast-lamp with.

EDWARD ANDREWS

If for no other reasons than these, (1) the part which elec-

tricity plays in our civilization, a part which it is destined to play to a still greater degree; (2) the interest which children feel for it in itself; (3) the interest which the child ought to feel in one of the greatest of nature's controllable forces, these are good and sufficient reasons for giving electricity an important place in the elementary school. Certainly if one of the chief aims of education is to fit one to utilize nature and nature's forces, this cannot be done unless the school gives the child the largest possible contact with natural forces.

HISTORICAL SKETCH

Before proceeding to a consideration of the subject-matter of electricity, suitable for the elementary schools, let us first make a survey of the field in the light of historical development.

Frictional electricity has been known at least for a period of twenty-five hundred years. The Greeks knew of it through rubbing amber. Aside from this nothing further was learned until about 1600 A. D., when Dr. Gilbert, Queen Elizabeth's court physician, after much experimenting, found a considerable list of substances which like amber and jet, when electrified by friction, caused attraction. The Greek name for amber is electron and the phenomenon produced in these substances being the same as in the case of amber, he named it electrification; so it is to Gilbert electricity owes its name. He is called the father of electricity and magnetism.

The first electrical machine was a ball of brimstone mounted on an axis. When turned rapidly, if silk were held firmly against the revolving brimstone, frictional electricity was produced—barely enough to cause a spark. We owe this invention to Otto von Guericke, the burgomaster of Magdeburg, who lived about the middle of the sixteenth century. Experiments with this machine led up to an accidental discovery resulting in the invention of the Leyden jar in its original form in 1745 by Dean von Kleist. With the numerous experiments made possible by the Leyden jar and the friction machine, interest in electricity advanced by leaps and bounds. For the first time in history man could produce and control electricity of a high power. However, he was still dealing with frictional electricity. Then followed a

period of play. The learned physicists and scientists of Europe entertained the courts with their wonderful toy and for a half-century it was the plaything of royalty.

A century later America entered the lists for scientific honors with Franklin as her champion. His interesting experiments soon awakened wonderful enthusiasm. In 1752, when he proved by his celebrated kite experiment that electricity and magnetism are identical, he found by his invention of the lightning rod the first means by which a knowledge of electricity could be made of actual service to man. His theories as to electricity were at first given scant recognition by the English experimenters. The French immediately accepted his theories and proved them by experiment which in large part explains Franklin's wonderful popularity with the French during Revolutionary times.

So far scientists were handicapped as the frictional electricity of the static machine stored up in the Leyden jars gave only an instantaneous spark to be experimented with. As yet no one could produce a steady flow or current of electricity.

In 1800 the invention by Volta, of the voltaic pile and later the voltaic cell, made possible a steady flow of electricity by chemical means and scientists were in a position now to study the electric current. Since then events have followed so rapidly that it is difficult for the layman merely to keep pace with them. The science and art of electricity now demands an army of experts, no one of whom can cover the whole field successfully. In 1802 Humphrey Davy produced the electric flame or arc caused by the flow of the current through the juncture of two carbon tips; in 1820 Oersted found that a magnetic needle was deflected if placed near a current. This suggested investigation of the relation between electricity and magnetism or electro-magnetism; in 1822 Faraday produced the first electric motor; in 1825 Sturgeon invented the soft iron electro-magnet, an instrument for using the temporary magnetization produced by the flow of a current of electricity.

This invention marked an epoch. The possibilities were seen to be tremendous. Since then millions of electro-magnets have been made. The electro-magnet is the essential part of the tele-

graph, the telephone, the sub-marine cable, the relay, the recorder, the motor, the electric signal, the electric bell, and numerous simple electrical machines.

Since the flow of electricity produced a magnetic field, Faraday in 1831 began a series of experiments with magnetism to see if it could be made to produce electricity. His researches resulted in success. His magnet led up to the dynamo which produces electricity by mechanical means. However, until about 1878, electricity had very little commercial or industrial value, aside from its use in the arc light, and in the telegraph which came into use about 1840. The telegraph has been a great aid in the development of rapid railroad transportation. The invention of the dynamo, however, made it possible to transform the energy of water power and heat into the energy of electricity at a much cheaper price than ever before and at enormous pressures. The transformer invented in 1831 made it possible to reduce the pressure at any point along the line, thus putting the powerful current under perfect control, so that it could be used for all purposes requiring currents of different control.

The more recent discovery of the X-ray and its application to medicine and surgery, and of the Hertzian waves with the development of wireless telegraphy, of the street motor-car, and of the automobile, are too recent to need an account here. While it is true that steam is still our greatest motive-power, electricity is gradually but surely supplanting it. Business men almost invariably prefer it to steam, gas, or water power, owing to its numerous advantages. Its greater cost is in many localities its only drawback. Since 1878 the development of electricity in a commercial way has been marvelous. The inventions of Edison, Westinghouse, and a host of others would fill volumes if one attempted to give an account of the innumerable ways in which they have learned how to apply the principles of electricity to solve the problem of sound, heating, lighting, transportation, surgery, communication, and almost every line of human endeavor.

For many years facts about electricity have been taught in secondary schools, in technical schools, and in universities. In engineering schools it holds of course a position of prime im-

portance. The subject was brought during the past decade or two into some few elementary schools with the movement to enrich the school life, hoping thereby to put life into the "three R's." However, most of the subject-matter as generally taught has been chiefly concerned with experiments in frictional electricity. But frictional electricity plays a very insignificant part in the present use and applications of electricity. Historically it has played a great part in the development of the subject, as it was the point of approach. The pith ball, the friction machine, the Leyden jar, the electrophorus, etc., have held sway often almost to the entire exclusion of the larger field of current electricity. Progress in the electrical field has been so kaleidoscopic that while the pedagogue may have kept pace with a knowledge of this progress he has not kept pace in his educational practice in teaching the subject. Too often he is still manipulating his pith balls, silk and glass, Leyden jars, tinfoil apparatus, etc., evidently oblivious of the fact that the electrical world has long since left them to get dusty on an upper shelf, only taking them down to show the one-time plaything, or as evidence of the progress which they have been instrumental in bringing about. The essential applications of electricity are concerned with current electricity. Probably the fact that most textbooks begin with a treatise on frictional electricity accounts for the method of the teacher who has not yet emancipated himself from slavishness to the dog-eared textbook, which too often is written from a logical standpoint, or in the chronological order of the development of the subject.

Until books intended for use in educational work are psychologized, the teacher to do intelligent work must lay aside poor texts and present his subject so as to make the present experiences and interests of the child the starting-point. It has been well said that "the subject-matter, just as it stands for the scientist, has no direct relationship to the child's present experience."

It is my purpose, in the next article, to sum up some work in electricity done from the above point of view, illustrated by work from the seventh grade.

READING FOR LITTLE CHILDREN—PART IV

ELSIE AMY WYGANT
Second Grade, The University Elementary School

EVENING IN THE CAVE

These were happy times in the cave.

In the long evenings Old Mok and Ab sat in the firelight together.

Then the old man began to teach Ab to make wonderful things of stone.

At first Ab sat near by and watched Mok as he worked.

Then the old man gave him a flint scraper to smooth the long spear handles.

Next he taught him to chip stone.

At first Mok gave Ab only the waste flint.

And Ab spoiled many a piece.

But in time he grew skilful.

He could make a flake with as sharp a point and fine an edge as old Mok himself.

Then the old man was proud of the boy.

He taught him to make scrapers and knives, chisels and spearheads of flint.

Ab was strong too.

He could make heavy axes and mallets of red-stone and granite.

He learned to chip from a piece of flint a pointed tool called a drill.

Now he could make needles of bone for his mother and bore the hole for the eye with his drill.

He found pretty shells and animals' teeth and fishes' scales.

He bored a hole in each and strung them on reindeer sinew.

These made fine necklaces to wear.

But there was one thing Ab never could learn to do.

Old Mok could carve wonderful pictures of tigers and reindeer and rhinoceras and bears.

This Ab could not learn to do.

But he would go into the forest and get the horns of the reindeer or elk.

When the men came home from a hunt he would beg the tusks and the shoulder blades.

All these he brought to Old Mok to carve.

As the old man carved pictures on the drinking-cups or knife handles, the boy would sit watching in the firelight by his side.

THE GREAT STONE KETTLE

Red-Spot was very proud of her kitchen.

There was no other in the valley so good.

She had the wood fire where she broiled meat on long sticks.

Then there were the hot coals and ashes where she roasted clams and oysters.

She covered fish with clay and baked it here.

But best of all was the place where things could be boiled.

Outside of the cave there was a great sandstone rock.

The top of this rock was nearly flat.

This was what Red-Spot wanted for a kettle.

So Ab tried to roll it into the cave.

But it was so heavy he could not move it.

Then One-Ear and Red-Spot and even old Mok helped him.

Together they rolled it into the cave.

And now the work began.

First Mok marked out a circle with his stone axe—a circle as big as a tub.

The stone had to be hollowed out within this circle to make the great kettle.

And Ab was to dig out the hollow.

He pecked and pecked with his flint chisel.

At the end of two days it had only begun to be hollow.

He tried to find a way to work faster.

He knew that he needed more weight on his chisel.

At last he brought a forked stick into the cave.

He bound the chisel into the fork.

He bound a heavy stone to the handle of the forked stick.

Now the chisel could not be driven upward when it struck the great rock.

He held the handle with both hands.

He lifted it and drove it into the hollow.

The stone weight made the chisel cut deep.

Great pieces came off at each blow.

In a few days the great stone kettle was finished.

Then Red-Spot was happy.

She was proud of Ab and his skill.

THE FEAST ABOUT THE STONE KETTLE

It was just at sunset that Ab finished the great stone kettle.

Now it happened that One-Ear had been hunting that day.

He had brought home the hindquarter of a reindeer

So they made ready for a feast.

First Bark filled the kettle with water.

Red-Spot dropped pieces of meat into the water.

Then she heated stones in the fire.

When the stones were hot she lifted them from the fire with tongs made of green twigs.

She dropped the hot stones into the water.

Soon it was bubbling and boiling.

Then a fine rich odor filled the cave.

The stew was ready to eat.

Each one rushed for a clam shell or gourd or deer horn.

With these they dipped out the stew to drink.

With sharp sticks they got the boiled meat.

Now and then little Beachleaf cried out for she wanted more stew and she was so little she could not reach into the great kettle.

They talked and laughed as they ate.

They praised Ab for his work.

When the feast was over they sat about the fire.

Old Mok told stories till Bark and Beechleaf fell asleep.

So ended the first feast about the great stone kettle.

EDITORIAL NOTES

The Loss of Professor Jackman

The loss to this journal of Professor Wilbur S. Jackman has brought with it the problem of responsibility for the further conduct of the *Elementary School Teacher* and its policy. Professor Jackman's editorials represented very vividly not only his own reactions to the problems of elementary education, but also that liberating movement in pedagogy for which Mr. Jackman and Colonel Parker before him have stood. The numbers which have appeared since Mr. Jackman's death have sought to continue the spirit and form with which he had invested the publication. It was however characteristic of its former editor's direction that the *Elementary School Teacher* reflected not only an educational movement but also an embodiment of this movement in a personality.

The Present Editorial Board

Such a direction cannot be long successfully continued when the personality has gone. While, therefore, the journal continues to represent the liberalizing movement in education with which Mr. Jackman identified himself, the responsibility for its presentation has been divided among those who we hope will be competent to represent its many sides. The editing of the *Elementary School Teacher* has passed, then, into the hands of a committee, made up from the department of Philosophy and Education in the University of Chicago, and from the staffs of the University's College of Education and the Elementary School. We have sought safety in numbers, recognizing the bewilderingly numerous phases of elementary-school teaching, and the importance of the specialist in representing these to the public whom we seek to reach. The editorial committee is a part of a larger one including that which conducts the *School Review*. The conduct of the

Elementary School Teacher will therefore have the benefit of association with an organ representing secondary education. There should result from this association broader views of problems which are common to both the elementary and high schools, and an increased confidence in presenting to those interested in elementary teaching the course which modern pedagogy should steer among its perplexing problems.

The Programme

There is little difficulty in formulating the programme of the modern pedagogy. It calls for a school so organized socially that the child may live there his own life. The experiences of school life are to be justified by their immediate value to the children as well as by their import for the activities of adults. This sort of education takes place at home—it is the only education among more primitive peoples. Its results justify the method. The character-building, the unfolding of balanced intelligence which a well-ordered home achieves, present an educational ideal which perhaps no elementary schools have ever reached. What is more natural than to demand that family life be domesticated in the schoolhouse? But in the average schoolhouse we find a régime organized with an eye single to the acquirements demanded by the after life of the man and the woman. The pupil is looked at under the perspective of the adult. It is easy to react against this unnatural attitude, by substituting for the adult interests, which are over-represented in typical curriculums, the interests, of the child; to find in the spontaneous activities of childhood the subject-matter for the child's curriculum.

The Loss of Family Morale

This reaction, however, overlooks the morale of family life. It is the dominant activity of the parents that constitutes the control, that determines times and seasons, and gives the proper perspective to the child's interest. When the child helps in the labors of the home, or bears his part in the industries that used to center there, an educational ideal arises, which could only be realized in the school, if its activities had the same compelling power. To make the school life entirely out of the child's spontaneous processes is to quite upset the natural order of the family or community life which

we are seeking to copy. Education in these its natural habitats consists in relating the child's spontaneous activities to the dominant, controlling activities of the community. It is the presence of this relation in trade and professional schools that gives a morale to their pupils which is indeed purchased at the price of a certain unfortunate narrowness.

Educational Reform, Its Development, and the Reaction against It

The doors by which educational reform entered the school were those of history, the sciences, and nature-study. Today we see both a development of this reform and a reaction against it. The industrial arts have come to take the strategic position which history and nature-study earlier occupied. The reason for this is evident. The arts give a powerful motive to the child for acquiring technique, by means of which it is hoped that the desired control over language and number may be gained. The reaction is represented by the demand for drill as the pivotal element of the school teaching. It appears in the guise of modern psychology, in the demand for habits which will operate without conscious attention, or for the education of the spinal column with its reflexes and automatisms. On the one hand this reaction demands the old methods of instruction in language and number, and has no confidence in the motives that spring from the child's desire to gain skill, and to acquire techniques. On the other hand the movement has behind it the feeling that a school which follows simply the creative and outgoing impulses of the children lacks the compulsion which the child's activities at home, on the farm, and in the shop, meet in adjusting themselves to the adult processes to which they contribute.

Isolation in the School Life Where Advanced Methods Obtain

The school which merely drills is hopelessly isolated from the real life of the child. And we must make the same criticism upon a school life which is organized entirely about outgoing and creative impulses. A child who criticizes the results of his work with the severity of the artist and skilled mechanic is no longer a child. The child, because he is a child, is more interested in the process than in the result.

The Real Educational Problem

Here lies the crux of the problem in elementary education: How to use the child's own impulses, his native interests, material which is worthy because it has meaning for him, and the motive for getting technique which springs from interest in what he does, and yet to make felt the authoritative discipline and criticism of adult human achievement, which is as real a part of the child's normal life as it is of the adult's, though the incidence is not the same.

While this journal has no fixed programme to proclaim, it will continue to stand for modern educational reform in both the phases above stated, regarding with especial interest the movement toward social organization of the school as a means to the attainment of the disciplinary element in the child's development.

G. H. M.

NOTES AND NEWS

Early in November there was cabled to America news of the death of Herr Otto Salomon, director of the Slöydlärareseminarium at Nääs, Sweden. Herr Salomon organized the school at Nääs in 1872 on a great estate contributed to the cause by his uncle, August Abrahamson, who made Otto Salomon his director. After the death of Herr Abrahamson in 1898 the foundation, by his will, became the property of the state, and is now known as the August Abrahamson Stiftelse. The fundamental purpose of the school is the training of teachers along pedagogical and technical lines. Woodwork has been the special handicraft, but in 1902 courses in gardening, cooking, and sewing were added. All courses, however, must include pedagogy, gymnastics, and games. Since the school opened its doors to foreigners, five thousand students have taken courses in sloyd, and fifteen governments have sent delegates to study the system with the idea of introducing it into their own country.

Some of Herr Salomon's more important lectures at Nääs have been published in book form: *The Theory of Educational Sloyd* and *The Teachers' Handbook of Sloyd*. These books have been translated into five different languages. An aristocrat by birth and breeding, Herr Salomon was theoretically and pedagogically a democrat. He was at once master, father, and friend to the people on his estate. As a man and as an instructor Herr Salomon made a deep impression upon all his students. They came away from Nääs with a vital consciousness of his simplicity, integrity, mental alertness, wide learning, and cosmopolitan aims and sympathies. It may be too early accurately to estimate the service of Herr Salomon to the cause of manual training, but when the history of that movement shall be finally written the name of Otto Salomon will almost certainly stand first, not only in time but in importance.

BOOK REVIEWS

A First Latin Book. By WILLIAM GARDNER HALE. Chicago: Atkinson, Mentzer & Grover, 1907. Pp. xvi+354. $1.00.

The beginning Latin book is designed to present efficiently the six essentials stated by Dr. Johnston of Indiana University in a paper on "Sanity in First Year Latin," published in the *Classical Journal* for February, 1906. These essentials are inflections, order of words, translation, syntax, pronunciation, word-lists. The method of presentation and points emphasized the more, vary in different books.

One weakness in our educational products is that some pupils go through school without learning to think. This is sometimes said to be due to the fact that the amount of work to be done is so great, that the teacher has not time to develop lessons so that the pupil will learn to think.

The beginning Latin work is great in quantity. The greatest merit in Dr. Hale's *First Latin Book* is that it covers all the essentials adequately without sacrificing correct method. The book is simple, thorough, lively, logical, and pedagogical. The steps in an individual lesson, related lessons on a case or mood, the whole book, all show a plan clearly, logically, and pedagogically worked out. Not too much is taken for granted as to the child's knowledge of English nor of his mental ability at the age of fourteen. The author makes sure of a proper preparation in the pupil's mind by a sort of printed talk on grammatical principles on which the new concept is based. Then with the aid of concrete examples the new concept is developed. The ease with which the first few lessons are mastered gains the sympathy and interest of the pupil. He is pleased to find that he can translate a Latin exercise at sight, and that Latin is not so foreign and antiquated as tradition would have it.

The teacher is surprised that Dr. Hale, who stands for advanced thought and progress in Latin, for highest modern scholarship, and for the new terminology, should be able to write a book incorporating so well that for which he stands, in such an exceedingly simple style and so well adapted to the youthful mind of the first-year Latin pupil. Inflections are arranged in a labor-saving order. After the first and second declension nouns and adjectives, the other adjectives and the pronouns appear, as they vary least from the last preceding declension. The arrangement also secures reviews from a new standpoint. Comparisons of old with new forms are repeatedly made. The active forms of the verbs in the present system are repeated on the page where the passives are found for the first time.

The Latin order is used and emphasized from the very first lesson. This stress on order from day to day forestalls and avoids the too common complaint, "I know the meaning of the words but I can't put them together."

The treatment of pronunciation is Dr. Hale's own. In division of words into syllables, the rule for disposition of consonants is changed. There is no special rule for the accent of words with enclitics attached. The length of some

of the vowels is changed from the old tradition. The nominatives *hic* and *hoc* have the vowels short.

The vocabulary is abundantly large, more than nine hundred words in all, with 91½ per cent. Caesarian according to the publishers' statement. They also state that each new word is used immediately in at least two lessons. The first word-lists have a large percentage of words that easily suggest English derivatives. This aids much in the new art of learning word-meanings in a foreign language.

The exercises are modern in spirit. The sentences soon become connected discourse, and this connected discourse is continued through the book. A mimic war affords preparation for Caesar. The discourse is lively. As in most beginning books there are exercises for translation into Latin. These are the sure and severe test of knowledge with ability to think and to apply.

The treatment of syntax especially shows the pedagogical method of treatment. Every step is clearly developed and stated. Never is the pupil launched upon an unknown sea, never does he work blindly, or have to learn that for which he can see no reason. Preparatory knowledge, explanations, illustrations, precede conclusions. All the case usages are developed so as to spur thought and make understanding clear. The fundamental case idea is given and other usages are built upon that. The historical touches in dealing with the ablative and the subjunctive add interest and clearness. The presentation of the subjunctive is a happy combination of the new terminology, basic principles, and clear, simple exposition. The unity of the whole work, the harmony of the parts, the correct method of thinking given the pupil, are strong healthful features of the book.

The summary of constructions in the back of the book may profitably be used with the second year's work.

LILLIAN CARTER

PRINCETON, IND.

Geographical Stories Retold from St. Nicholas. New York: The Century Co., 1907.

Nothing, however small, that will help to bridge the chasm in the youthful mind between "reading for fun" and "literature," that will in any degree convince that good writers, as truly as poor ones, have written for the purpose of giving pleasure, and really have given more pleasure than poor ones, can be considered unimportant. Therefore every book that by its appearance or character will make boys or girls wish to read it or others like it, and will at the same time lead toward the greater and better books, has genuine educational value—perhaps greater than we at first suppose. The series of books issued by The Century Co. comprises six volumes of something under two hundred pages each: *Stories of Strange Sights; Stories of the Great Lakes; Western Frontier Stories; Sea Stories; Island Stories,* and *Southern Stories.* The stories have been read in *St. Nicholas* by such armies of children that they require no comment. They are here presented in a form as attractive as anyone could well wish, in excellent print with interesting illustration. A good deal of valuable instruction is conveyed in the six volumes, sometimes with a very thin coating of narrative. But the greatest value in such books is the lesson they give in reading as a source of pleasure.

J. A. C.

BOOKS RECEIVED

THE UNIVERSITY OF CHICAGO PRESS

Literature in the Elementary School. By PORTER LANDER MACCLINTOCK, A.M. Cloth. Pp. 305.

First-Year Mathematics for Secondary Schools. By GEORGE WILLIAM MYERS. Cloth, 12mo. Illustrated. Pp. 198. Net $1.00; postpaid $1.09.

Geometric Exercises for Algebraic Solution. By GEORGE WILLIAM MYERS. Cloth, 12mo. Illustrated. Pp. 86.

AMERICAN BOOK COMPANY, NEW YORK

The Trail to the Woods. By CLARENCE HAWKES. Cloth, 12mo. Illustrated. Pp. 176. $0.40.

Text-Book in General Zoölogy. By GLENN W. HERRICK, B.S.A. Cloth, 12mo. Pp. 386. $1.20.

Text-Book in Physics. By WILLIAM N. MUMPER, Ph.D. Cloth, 8vo. Illustrated. Pp. 411. $1.20.

Book of Plays for Little Actors. By EMMA L. JOHNSTON AND MADELENE D. BARNUM. Cloth, 16 mo. Illustrated. Pp. 171. $0.30.

Second Fairy Reader. By JAMES BALDWIN. Cloth, 12mo. Illustrated. Pp. 192. $0.35.

Explorers and Founders of America. By ANNA ELIZABETH FOOTE AND AVERY WARNER SKINNER. Cloth, 12mo. Illustrated. Pp. 310. $0.60.

The Adventures of Deerslayer. Adapted from J. FENIMORE COOPER'S *Deerslayer*, by MARGARET M. HAIGHT. Cloth, 12mo. Illustrated. Pp. 131. $0.35.

The Story of Two Boys. Retold by CLIFTON JOHNSON. Cloth, 12mo. Illustrated. Pp. 192. $0.35.

Famous Pictures of Children. By JULIA AUGUSTA SCHWARTZ. Cloth, 12mo. Illustrated. Pp. 144. $0.40.

Practical Zoölogy. By ALVIN DAVISON, A.M., PH.D. Cloth, 12mo. Illustrated. Pp. 368. $1.00.

High School Algebra. By J. H. TANNER, PH.D. Half-leather, 8vo. Pp. 352. $1.00.

GINN AND COMPANY, CHICAGO

With Pencil and Pen. By SARAH LOUISE ARNOLD. Cloth, 12mo. Illustrated. Pp. 130.

Rhymes and Stories. By MARION FLORENCE LANSING, M.A. Cloth, 16mo. Illustrated. Pp. vi+184.

Introductory Sight-Singing Melodies. By E. W. NEWTON. Cloth, 8vo. Pp. v+42. Net $0.22; postpaid $0.30.

Laboratory Exercises in Elementary Physics. By H. NEWMAN, B.S., P.D.M. Paper. Illustrated.

Examining and Grading Grains. By THOMAS LYTTLETON LYON, PH.D., AND EDWARD GERRARD MONTGOMERY, B.S.C. Cloth, 12mo. Illustrated. Pp. 101. Net $0.60.